(described hereinabove with reference to FIG. 4A) may include a mirror 160 with a darkened portion 162 that does not reflect light, and clear portions 164 which do reflect light. The clear portions 164 are shaped like characters, numerals, letters or any other shape which it is desired to form a light-generated image 166 thereof.

It will be appreciated by persons skilled in the art that the present invention is not limited by what has been particularly shown and described hereinabove. Rather the scope of the present invention includes both combinations and sub-combinations of the features described hereinabove as well as modifications and variations thereof which would occur to a person of skill in the art upon reading the foregoing description and which are not in the prior art.

What is claimed is:

1. A data input device comprising:
an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;
a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being an optical position sensing device (PSD); and
a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

2. The device according to claim 1 and further comprising a light source which generates a light beam, and beam-moving apparatus which moves said light beam to generate said optically generated image of said data input device.

3. The device according to claim 2 wherein said beam-moving apparatus comprises a mirror arranged to reflect said light beam.

4. The device according to claim 3 and further comprising an actuator operatively connected to said mirror, wherein said actuator moves said mirror to reflect said light beam to form at least a two-dimensional image of said data input device.

5. The device according to claim 2 wherein said beam-moving apparatus comprises a scanner arranged to scan said light beam, and an actuator operatively connected to said scanner, wherein said actuator moves said scanner to scan said light beam to form at least a two-dimensional image of said data input device.

6. The device according to claim 1 wherein said data input device comprises a key of a keyboard.

7. The device according to claim 1 wherein said data input device comprises a keyboard.

8. The device according to claim 1 wherein said data input device comprises a mouse with at least one input button.

9. The device according to claim 1 wherein said data input device comprises a key of a touch pad.

10. A data input device comprising:
an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;
a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being an acoustic sensor; and
a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

11. The device according to claim 1 wherein said processor is in communication with an output device.

12. The device according to claim 11 wherein said output device comprises at least one of a computer, a mobile telephone, a switch, and a palm-held computer/calculator.

13. A method for data input comprising:
generating an optical image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;
performing an action on said at least one input zone;
sensing the action performed on said at least one input zone, said sensing comprising:
detecting light reflected from an object within a silhouette of said image; and
analyzing a reflection of said light to determine a spatial position of the object; generating signals in response to said action; and
processing said signals for performing an operation associated with said at least one input zone.

14. The method according to claim 13 wherein the step of generating the optical image comprises generating an image of a keyboard and the step of performing an action comprises pressing keys of said image of said keyboard.

15. The method according to claim 14 wherein the step of processing said signals causes typing alphanumeric characters on at least one of a computer, cell phone, palm-sized computer/calculator and PDA.

16. The method according to claim 14 and further comprising modifying said image of said keyboard so as to modify a configuration of keys of said keyboard.

17. The method according to claim 14 and further comprising:
optically generating an image of characters of a first language on keys of said keyboard;
selecting a second language different from said first language; and
optically generating an image of characters of said second language on keys of said keyboard.

18. The method according to claim 13 wherein said optical image of said data input device is a holographic image.

19. The method according to claim 13 wherein said optical image of said data input device is generated by means of a monochromatic laser.

20. The method according to claim 13 wherein said optical image of said data input device is generated by means of multiple laser sources having different colors and wavelengths.

21. The method according to claim 13 wherein said optical image of said data input device is generated by means of a single laser source and using color and wavelength splitters to split light from said single laser source.

22. The method according to claim 13 wherein said optical image of said data input device is generated by means of differently polarized light beams.

23. The method according to claim 13 wherein the step of sensing comprises:
providing a light beam emanating from a light source;
detecting light reflected from an object within a silhouette of said image, corresponding to said light beam; and
analyzing an angle of said light beam and a time for the beam to be reflected back from said object to a reference to determine a spatial position of the object.

24. The method according to claim 23 wherein said reference comprises an optically readable reference.

25. The method according to claim 24 wherein said optically readable reference comprises a tangible bar code strip.

26. The method according to claim 24 wherein said optically readable reference comprises an optically generated bar code strip.

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27. The method according to claim 23 wherein said optical image of a data input device is generated by the same light beam whose reflection is used to determine the spatial position of the object.

28. The method according to claim 13 wherein the step of sensing comprises:

providing a non-visible-light beam emanating from a non-visible light source;

detecting an image of said non-visible light impinging upon an object within a silhouette of said image of the data input device; and

analyzing said image of said non-visible light to determine a spatial position of the object.

29. The method according to claim 28 wherein said non-visible light beam comprises an infrared beam and said image of said non-visible light comprises an infrared image of said object.

30. The method according to claim 13 and further comprising detecting light reflected from an object within a silhouette of said image and preventing said image from impinging upon said object.

31. A method according to claim 13 and wherein said sensing also comprises providing a light beam emanating from a light source.

32. A method according to claim 31 and wherein said sensing also comprises analyzing an angle of said light beam to determine a spatial position of the object.

33. A method for data input comprising:

generating an optical image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

performing an action on said at least one input zone;

sensing the action performed on said at least one input zone, said sensing comprising:

providing a non-visible light beam emanating from a non-visible-light source;

detecting an image of said non-visible light impinging upon an object; and

analyzing said image of said non-visible light to determine a spatial position of the object;

generating signals in response to said action; and

processing said signals for performing an operation associated with said at least one input zone.

34. A method according to claim 33 and wherein said step of analyzing also comprises analyzing an angle of said light beam to determine a spatial position of the object.

35. The method according to claim 33 wherein the step of analyzing also comprises analyzing an angle of said light beam and a time for the beam to be reflected back from said object to a reference to determine a spatial position of the object.

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36. A data input device comprising:

an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being operative to:

detect light reflected from an object within a silhouette of said image; and

analyze a reflection of said light to determine a spatial position of the object; and

a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

37. The device according to claim 36 and further comprising a light source which generates a light beam, and beam-moving apparatus which moves said light beam to generate said optically generated image of said data input device.

38. The device according to claim 37 wherein said beam-moving apparatus comprises a mirror arranged to reflect said light beam.

39. The device according to claim 38 and further comprising an actuator operatively connected to said mirror, wherein said actuator moves said mirror to reflect said light beam to form at least a two-dimensional image of said data input device.

40. The device according to claim 37 wherein said beam-moving apparatus comprises a scanner arranged to scan said light beam, and an actuator operatively connected to said scanner, wherein said actuator moves said scanner to scan said light beam to form at least a two-dimensional image of said data input device.

41. The device according to claim 36 wherein said data input device comprises a key of a keyboard.

42. The device according to claim 36 wherein said data input device comprises a keyboard.

43. The device according to claim 36 wherein said data input device comprises a mouse with at least one input button.

44. The device according to claim 36 wherein said data input device comprises a key of a touch pad.

45. The device according to claim 36 and wherein said sensor analyzes an angle of determine a spatial position of the object.

46. The device according to claim 36 wherein said sensor analyzes an angle of said light and a time for said light to be reflected back from said object to a reference to determine a spatial position of the object.

*   *   *   *   *